



## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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| <b>(51) International Patent Classification 6 :</b><br><b>C12Q 1/68, 1/70, C12N 13/00, C07H 21/02, 21/04, A01N 43/04</b>  | <b>A1</b> | <b>(11) International Publication Number:</b> <b>WO 99/67427</b><br><b>(43) International Publication Date:</b> 29 December 1999 (29.12.99)  |
| <b>(21) International Application Number:</b> PCT/US99/14486<br><b>(22) International Filing Date:</b> 24 June 1999 (24.06.99)<br><br><b>(30) Priority Data:</b><br>09/104,295      24 June 1998 (24.06.98)      US<br><br><b>(71) Applicant:</b> VIROLOGIC, INC. [US/US]; 270 East Grand Avenue, South San Francisco, CA 94080 (US).<br><br><b>(72) Inventors:</b> PETROPOULOS, Christos, J.; 415 Garcia Avenue, Half Moon Bay, CA 94019 (US). WHITCOMB, Jeanette; 633 Highland Avenue #4, San Mateo, CA 94401 (US).<br><br><b>(74) Agent:</b> WHITE, John, P.; Cooper & Dunham LLP, 1185 Avenue of the Americas, New York, NY 10036 (US). |           | <b>(81) Designated States:</b> AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).<br><br><b>Published</b><br><i>With international search report.</i><br><i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i> |
| <b>(54) Title:</b> MEANS AND METHODS FOR MONITORING NUCLEOSIDE REVERSE TRANSCRIPTASE INHIBITOR ANTIRETROVIRAL THERAPY AND GUIDING THERAPEUTIC DECISIONS IN THE TREATMENT OF HIV/AIDS  |           |  |
| <b>(57) Abstract</b><br><p>This invention relates to antiviral drug susceptibility and resistance tests to be used in identifying effective drug regimens for the treatment of human immunodeficiency virus (HIV) infection and acquired immunodeficiency syndrome (AIDS) and further relates to the means and methods of monitoring the clinical progression of HIV infection and its response to antiretroviral therapy, particularly nucleoside reverse transcriptase inhibitor therapy using phenotypic susceptibility assays or genotypic assays.</p>  |           |  |

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US99/14486

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) :C12Q 1/68, 1/70; C12N 13/00; C07H 21/02, 21/04; A01N 43/04  
US CL :435/5, 6, 173.3; 536/23.1, 23.72; 514/44

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 435/5, 6, 173.3; 536/23.1, 23.72; 514/44

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
NONEElectronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
Please See Extra Sheet.

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages   | Relevant to claim No. |
|-----------|--|-----------------------|
| Y         | KREBS et al. Single-Step Kinetics of HIV-1 Reverse Transcriptase Mutants Responsible for Virus Resistance to Nucleoside Inhibitors Zidovudine and 3-TC. Biochemistry. June 1997, Vol. 36, No. 33, pages 10292-10300, especially page 10299, column 1, second paragraph.                            | 1-31                  |
| Y         | KLEIM et al. In Vitro Selection for Different Mutational Patterns in the HIV-1 Reverse Transcriptase Using High and Low Selective Pressure of the Nonnucleoside Reverse Transcriptase inhibitor HBY 097. Virology. February 1997, Vol. 231, No. 1, pages 112-118, especially Abstract and Table 2. | 1-31                  |

☒ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

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| * Special categories of cited documents:  | *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention  |
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| *P* document published prior to the international filing date but later than the priority date claimed  |  |

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